

A Fourth Generation Light Source Facility for the UK

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Free electron lasers are the latest generation of accelerator-based advanced light source, providing a unique combination of tuneability, coherence, polarisation, time-structured pulses and high laser power. The proposed facility, 4GLS, will consist of a low energy storage ring with insertion devices and a cavity-based VUV-FEL, together with a stand alone linac-based infrared free electron laser (IR-FEL). These sources range from the far infrared to the extreme ultraviolet and they offer ultra-high intensity within a facility layout which will encourage flexible and innovative use.

This work will describe the facility currently proposed and will discuss the predicted performance and opportunities for exploitation.